

SOLAR DESALINATION PLANT

ABSTRACT

The present invention, a SOLAR DESALINATION PLANT is a water desalinating plant utilizing solar energy. It comprises of an airtight housing chamber covered with a transparent dome at its top and a transparent wall constructed over a source of saline or murky water. The chamber stands in the water and the water covers entire bottom portion inside the chamber. The surface of the water inside the chamber is covered with black floats. There is an horizontal channel in the form of an open duct above the surface of the water all around fixed to the wall inside the chamber. The channel slightly slopes down into an outlet pipe and a transparent U-tube connecting to a transparent collecting tank. A suction pump is connected between the collecting tank and a storage tank through a valve. The storage tank is also connected to the collecting tank through another valve. The transparent dome allows the sun's rays to pass through into the chamber to heat the black floats. The water that is in contact with the black floats gets evaporated due to the latent heat supplied by the floats. The water vapour thus produced in the chamber, rises up and gets condensed on the cooler parts of the dome in the form of droplets. The droplets as they collect, slide down the wall into the channel and pass into the U-tube and then into the collecting tank. When sufficient water is collected in the collecting tank, the suction pump is activated to pump the water into the storage tank. As the suction pump operates, low pressure is also created in the chamber and the low pressure enhances the evaporation of water in the chamber. In absence of the suction pump, the water from the collecting tank can also be drawn by gravity into the storage tank which is at lower level. The solar rays, not only produce evaporation but also disinfect the water vapour to obtain pure distilled water. Since the solar energy is abundantly available freely in nature, the SOLAR DESALINATION PLANT exposes its uniqueness in presenting a low cost set up and economical production of fresh water in large scale.

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